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SWAZILAND

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1953

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SWAZILAND.

ANNUAL MEDICAL AND SANITARY REPORT

FOR THE YEAR 1953.

I. ADMINISTRATION.

(a) Staff.

European.

	Director of Medical Services
1	Malaria Medical Officer
1	Medical Officer (Health)
5	Medical Officers
1	District Surgeon
1	Intern (post vacant)
1	Health Inspector
1	Hospital Assistant and Dispenser
1	Dispenser, Storekeeper, Radiographer
14	Nursing Sisters
1	Clerk
1	Lady Clerk and Typist
1	Laboratory Assistant
2	Handymen (one post vacant)

African.

1	Medical Officer
1	Senior Hospital Assistant
2	Hospital Assistants
2	Dispensers
48	Nurses
2	Out-patient Attendants
2	Clerks
1	Laboratory Assistant
2	Ambulance Drivers
2	Dispensary Orderlies
17	Ward Attendants
3	Orderlies
1	Nurse Aide
1	Wardmaster
7	Cooks
1	Night Watchman
1	Office Messenger
2	Boiler Attendants
3	Hospital Groundsmen
16	Laundresses
2	Seamstresses
1	Senior Malaria Assistant
9	Malaria Assistants
1	Health Office Clerk
1	Lorry Driver
2	Orderlies (Laboratory)

Appointments and Changes in European Staff.

Name.	Office or Rank	Date of		
		Appointment.	Resignation.	Transfer.
Mr. J.Culverwell	Clerk	-	-	1. 1.53
Mrs. G.M. Bott	Clerk	1. 1.53	18.10.53	-
Miss J.C.McNamara	Nursing Sister	1. 1.53	1. 4.53	-
Miss V.M.Creighton	Nursing Sister	-	22. 1.53	-
Miss J.M.Marshall	Nursing Sister	-	23. 1.53	-
Miss S.J.Alan-Allen	Nursing Sister	2. 2.53	-	-
Miss N. Roche	Nursing Sister	-	10. 2.53	-
Miss M.J.Rowlands	Nursing Sister	1. 4.53	-	-

(Continued overleaf)

Appointments and Changes in European Staff (Continued).

Name.	Office or Rank	Date of		
		Appointment.	Resignation.	Transfer.
Miss C.D. Buckley	Nursing Sister	4. 4.53	-	-
Mrs. D.C.M. Lane	Lady Clerk	21. 4.53	-	-
Mrs. B. Stanley	Nursing Sister	11. 5.53	-	-
Mrs. R.M.Schutte (neè Chard)	Nursing Sister	-	12. 5.53	-
Mrs. D.Warburton	Lady Clerk	-	30. 5.53	-
Mr. J.H. Thomas	Clerk	23. 7.53	-	-
Miss P.M. Reardon	Nursing Sister	15. 9.53	-	-
Miss E.H. Overton	Nursing Sister	-	7. 9.53	-
Miss B.M. Armand	Nursing Sister	1.12.53	-	-

Reliefs.

Name.	Office or Rank.	From.	To.
Mrs. A. Jerman	Nursing Sister	1. 2.53	6. 4.53
Mrs. M.J. Malherbe	Nursing Sister	1. 2.53	23. 7.53
		20. 8.53	30. 9.53
Mrs. E.M. Willemsen	Nursing Sister	16. 3.53	12. 5.53
		28. 5.53	20. 6.53
		20. 8.53	19. 9.53
		2.10.53	31.10.53
		4.11.53	12.11.53
Mrs. M. Morris	Lady Clerk	11. 5.53	12. 8.53
		22.12.53	31.12.53
Miss E.A. Clarke	Nursing Sister	10. 7.53	20. 8.53
Dr. D. Drew, O.B.E.	Medical Officer	2.10.53	29.10.53
		10.12.53	31.12.53
Miss M.A. von Wissell	Nursing Sister	2.11.53	30.11.53

Distribution of European Medical and Nursing Staff on 31st December, 1953.

Name.	Rank.	Station.
Dr. J.C.J.Callanan, O.B.E.	Director of Medical Services.	Mbabane
Dr. H. Flack	Medical Officer	Mbabane
Dr. L.E.D.F. Joubert	Medical Officer	Mbabane
Mrs. G.M. Sivewright	Nursing Sister	Mbabane
Miss M.K. Irvine	Nursing Sister	Mbabane
Mrs. D.V. Seeton	Nursing Sister	Mbabane
Miss C.D. Buckley	Nursing Sister	Mbabane
Mrs. B. Stanley	Nursing Sister	Mbabane
W. Palliser	Handyman	Mbabane
Mrs. H. Perkins	Nursing Sister	Mankaiana
Dr. O. Arnheim	Medical Officer	Hlatikulu
Dr. T.J. Malherbe	Medical Officer	Hlatikulu
Mr. J.L. van der Vyver	Hospital Assistant Dispenser	Hlatikulu
Miss S.J.Alan-Allen	Nursing Sister	Hlatikulu
Miss M.J. Rowlands	Nursing Sister	Hlatikulu
Miss P.M. Reardon	Nursing Sister	Hlatikulu
Miss B.M. Armand	Nursing Sister	Hlatikulu

(Continued overleaf). ...

Distribution of European Medical and Nursing Staff on 31st December, 1953 (Continued).

Name.	Rank.	Station.
Miss S.McCorkindale, M.B.E.	Nursing Sister	Goedgegun
Miss A. Martin	Nursing Sister	Hluti
Dr. O. Mastbaum	Malaria Medical Officer	Bremersdorp
Miss J. Bredell	Laboratory Assistant	Bremersdorp
Dr. E.R.D. Eastman-Nagle	Medical Officer (Health)	Bremersdorp
Mr. G.J. van Eeden	Health Inspector	Bremersdorp

(b) LEGISLATION AFFECTING THE MEDICAL DEPARTMENT, ENACTED DURING THE YEAR.

(a) High Commissioner's Notice No. 36 Appointment of Members of High Commission Territories Nursing Council.
(b) Proclamation No. 72 Departmental Officers' Repeal.
(c) High Commissioner's Notice No. 53 Amendment of Urban Area Regulations.
(d) Proclamation No. 21 Urban Areas Regulations (Amendment) Proclamation.

(c) FINANCIAL.

Revenue 1953/54.

Hospital, Health Centre and other fees	£

Expenditure.

Personal Emoluments	£
Travelling allowance	£
Allowances and fees	£
Maintenance of patients and purchase of medicines	£
Medical Reaearch	£
Maintenance of Lepers	£
Maintenance of Lunatics	£
Specialist treatment in Union Hospitals for Indigents	£
Hospital Equipment	£
Uniforms for African Staff	£
Vaccination	£
Drug Replacement	£
Subsidies for Medical Services:- Church of the Nazarene Mission of South Africa £2940, Red Cross £30, Roman Catholic Mission £100, Our Lady of Sorrows School £75, Mahamba Mission £1140, Catholic Mission, Stegi £980	£
Anti-Malaria Measures	£
High Commission Territories Nursing Council, Travelling and other expenses	£
Upkeep of Grounds	£
Upkeep of X-ray plants	£
Overseas Passages	£
Anti-Malaria Drugs for Sale	£
Transport on Stores	£
Transport Silicosis Cases	£
Bilharzia control measures	£
	£
Anti-Malaria and Public Health Campaign Scheme No.D.1084	£
Leper Hospital Scheme No. D.1017	£
Extensions to Mbabane and Hlatikulu Hospitals and African Nurses Home, Bremersdorp, Scheme No. D.1085	£
Extension of Medical Services in the Lowveld, Scheme No. D.1505	£

See overleaf

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(c) FINANCIAL.

Revenue 1953/54.

Hospital, Health Centre and other fees	£ 3305

Expenditure.

Personal Emoluments	36179
Travelling Allowance	1766
Allowances & Fees	623
Maintenance of patients and purchase of medicines	15493
MedicalResearch	100
Maintenace of Lepers	337
Maintenance of Lunatics	1513
Specialist treatment in Union Hospitals for Indigents	187
Hospital Equipment	1907
Uniforms for African Staff	731
Vaccination	298
Drug Replacement	-
Subsidies for Medical Services :-	4591
Anti-Malaria Measures	3745
High Commission Territories Nursing Council, Travelling and other expenses	146
Upkeep of Grounds	97
Upkeep of X-ray Plants	39
Overseas Passages	-
Anti-Malaria Drugs for Sale	-
Transport on Stores	1970
Transport Silicosis Cases	125
Bilharzia control measures	678
	£70525
Anti-Malaria & Public Health Campaign Scheme D.1084	£ 9169
Leper Hospital Scheme D. 1017	1274
Extensions to Mbabane and Hlatikulu Hospital, and African NursesHome, Bremersdorp, Scheme D. 1085	1557
Extension of Medical Services in the Lowveld, Scheme D.1505	16
Total Expenditure on Medical and Sanitary Services	£ 82541
Total Revenue of the Territory	£1,000,071.
The relationship of Medical Expenditure (excluding Colonial Development & Welfare Fund Expenditure) to the total Revenue of the Territory	8.25.

Thisiinformation completes page 3 of the Annual Medical & Sanitary Report, (Swaziland), for 1953.

Total Expenditure on Medical and SanitarynServices	£
Total Revenue of the Territory	£
The relationship of Medical Expenditure (excluding Colonial Development and Welfare Fund Expenditure) to the total Revenue of the Territory	

NOTE:- Re: Section I (c) FINANCIAL.

The financial figures which are not available at the time of publication will be forwarded at a later date.

II. PUBLIC HEALTH.

(I). General Diseases.

The thesis of Dr. S.P. Perold who visited Swaziland in July, 1952, was received in August. It shows, inter alia, that increased porphyrian excretions in the Bantu were more frequent than in the European, and that in this respect members of the Coloured population hold a mid position. The reason for this phenomena has not been determined, but a hereditary factor has been established in the etiology of the condition, and this is probably dominant in acute porphyria and recessive in the congenital type.

Drs. Th. Gerritsen and A.R.P. Walker, who visited the territory in September, 1952, completed their investigation of serum iron and the iron-binding capacity of the Bantu, and their report which includes the Swaziland findings has been published in the South African Medical Journal of the 11th July 1953, and the results are summarised in the following extract from their article:-

> "The iron metabolism picture in the Bantu is interesting on account of their unusually high iron intake, the frequent occurrence of siderosis, the rarity of hypochromic anaemia, and the elevations of serum iron levels and total iron-binding capacity which are occasionally observed.
>
> This paper deals with levels of serum iron, total iron-binding capacity, and haemoglobin, in groups of young adult Bantu mine labourers from different regions in Southern Africa. In some groups, values for serum iron are higher than any yet reported, including the high values very frequently found in diseases such as haemochromatosis and transfusional siderosis. Also, in certain groups, elevations of total iron-binding capacity have been found, an unusual and unexpected finding. The latter observation, associated with unsaturation of the iron-binding protein in the serum, constitute a salient difference between what is observed in some Bantu, and in the two diseases mentioned. An interesting finding is the high average Hb. level for all groups studied.
>
> Present knowledge is inadequate to allow us to determine whether a correlation exists between abnormally high values in the serum, and (a) habitual level of iron intake, and (b) incidence of siderosis."

The fluorine content of a bore-hole water specimen from the farm Groenpan was found to be very low, the iodine content being fairly high, and salts being present in 448 parts per million. A specimen from a bore-hole on the farm Cyrildene, which is also situated on the Ubombo Range about ten miles from Stegi, yielded 688 parts of salt per million, the fluorine and iodine contents being 1.20 and 0.05 p.p.m. respectively.

(II) Communicable Diseases.

(i) Malaria. Following a period of drought, heavy rains occurred throughout the territory during the last quarter of 1952, and conditions became exceptionally favourable for the breeding of A. gambiae early in the transmission season. It soon became apparent that the malaria vector was spreading rapidly into the middleveld and certain highveld areas in the Southern portion of Swaziland, and invading vast areas which in normal years are free from vector-breeding. At an unusually early stage exceptionally heavy malaria transmission took place throughout the territory, coinciding with similar outbreaks in Zululand, Mozambique Territory and the Eastern Transvaal. In Swaziland the areas most seriously affected were those south of the Usutu River, and an exceptionally heavy "break-through" occurred in the Lubuli-Nsoko Section for which swamp conditions resulting from irrigation were primarily responsible. In combatting the serious malaria outbreak, which had assumed epidemic proportions before it was effectively checked, control measures had to be increased considerably, and it became necessary to spray huts in areas which are normally free of malaria, and re-treat those in the controlled areas to an additional extent. While in normal years, it has been the practice for huts in the lowveld areas to receive two applications of B.H.C., a single treatment sufficing in the middleveld, three sprayings in the former areas and two in the latter: were undertaken on this occasion, when 154,585 huts were sprayed with residual insecticide, during the 1952/53 transmission season, as compared with 71,951 in 1951/52. In addition to the anti-malaria measures carried out in Native Areas, the Department endeavoured to assist European farmers by utilising mobile emergency squads to spray their houses and African compounds, and 1,800 premises were dealt with in this manner. The variations in the incidence of malaria during the period December 1952-January 1953 to May 1953, are indicated by the figures relating to parasite-positive cases shown in the following tables:-

December/January: Parasite Rates, 1952 1953

Total blood films examined = 1359
Total positives : 250 = 18.4%

	Controlled Areas North		Controlled Areas South		European Farms		Non-controlled areas.	
	Total	Positive	Total	Positive	Total	Positive	Total	Positive
Field	498	17	191	22	223	42	238	36
Hospital	68	9	23	21	53	49	67	54
Total	566	26	214	43	276	91	305	90
Parasite Rates	4.6%		20%		36.6%		29.5%	

February Parasite Rates.

Total blood films examined = 1003
Total positives : 224 = 22.3%

	Controlled Areas North		Controlled Areas South		European Farms		Non-controlled areas	
	Total	Positive	Total	Positive	Total	Positive	Total	Positive
Field	345	16	285	68	139	38	58	3
Hospital	69	20	28	19	23	20	56	40
Total	414	36	313	87	162	58	114	43
Parasite Rates	8.7%		27.8%		35.8%		37.7%	

March Parasite Rates.

Total blood films examined = 816
Total positives : 151 = 19.7%

	Controlled Areas North		Controlled Areas South		European Farms		Non-controlled areas	
	Total	Positive	Total	Positive	Total	Positive	Total	Positive
Field	294	18	228	34	47	32	85	13
Hospital	76	15	25	15	35	19	26	15
Total	370	33	253	49	82	51	111	28
Parasite Rates	8.9%		19.3%		50.0%		25.2%	

April **Parasite Rates** Total blood films examined = 767
Total positives : 86 = 11.2%

	Controlled Areas North		Controlled Areas South		European farms		Non-controlled areas	
	Total	Positive	Total	Positive	Total	Positive	Total	Positive
Field	409	15	168	20	123	22	10	
Hospital	36	8	7	4	12	9	16	
Total	445	23	175	24	135	31	26	8
Parasite Rates	5.2%		13.7%		23%		3%	

May **Parasite Rates** Total blood films examined = 837
Total Positives : 46 = 5.4%

	Controlled Areas North		Controlled Areas South		European Farms		Non-controlled areas	
	Total	Positive	Total	Positive	Total	Positive	Total	Positive
Total	554	19	221	13	62	14	-	-
Rates	3.4%		5.8%		22.5%		-	

During the 1951/52 transmission season the parasite rates in areas controlled for two or more years, and for one year only were 2.1% and 20.9% respectively, as compared with 50-80% before routine anti-malaria measures were introduced. It will be observed that in the northern controlled areas the parasite rate rose from its pre-epidemic level of 2.1% to a maximum of 8.9% in March, which was a relatively light "break-through", and that thereafter the situation ceased to deteriorate, as a result of the intensified control measures. In the southern controlled areas and on European farms the situation in February and March was far more serious, and in non-controlled native areas, the parasite rates were regarded as extremely high, as these units are situated in parts of the middleveld and highveld which are malaria-free in normal years. The April figures showed a marked reduction in comparison with those of the previous month, and as these results were achieved in the month when peak transmission usually occurs, it was then evident that the intensification and extension of control measures had succeeded in preventing the disease from attaining undue proportions in almost all areas, or of maintaining its foothold in the middle and highveld areas it had invaded.

The incidence of malaria in 1953 as indicated by the number of cases treated at District Hospitals increased considerably as compared with 1952 in that 574 cases attended as against 164 in the previous year, but this is clearly of little significance when it is realised that the total number of cases microscopically diagnosed at the Public Health laboratory was only 764 when contrasted with 5743 in 1946, when it was estimated that 50,000 cases of malaria occurred within the confines of the territory.

The case distribution by Districts was as follows:-

Manzini-Stegi	43. %
Hlatikulu	25.5%
Mbabane-Pigg's Peak	19.6%
Mankaiana	11.7%

The cases of malaria treated by field and laboratory staff and detailed in the following table showed a substantial increase as compared with 1952 in which the incidence of malaria was the lowest in the history of the Territory.-

1953.	Field Staff.	Laboratory$^{(x)}$
January	82	0
February	104	1
March	52	0
April	39	1
May	20	0
June	0	0
July	0	0
August	6	0
September	5	0
October	13	0
November	8	0
December	6	0
Total	335	2
1952	81	0
1951	181	4
1950	798	29

(Note (x) = microscopically diagnosed.

The cost of spraying operations during the last season amounted to 1/3d. per hut or 1/-½d. per head of population per annum, and these figures compare very favourably with those of Mauritius (3/-) and the Transvaal (2/6d.).

Apart from abnormal climatic conditions, the unusually high incidence of malaria during the 1952/53 transmission season is ascribed to the following factors:-

(i) The absence of control measures in African compounds and in the kraals of squatters on European farms,

(ii) Absence of control measures in the huts of squatters on Crown Land,

(iii) Absence or inadequacy of control measures in certain Native Areas in the southern part of the territory,

(iv) The conditions arising from the construction of dams and irrigation canals and the cultivation of crops under irrigation,

(v) The spraying squads inability to treat all huts in their areas within the period between vector-breeding and malaria transmission under epidemic conditions, in the absence of suitable mechanical transport.

Experience gained during the last transmission season has confirmed the fact that malaria tends to assume epidemic proportions in Swaziland and the adjoining territories at intervals of seven years, emphasised the dangers associated with irrigation projects and the inadequacy of anti-adult measures alone under such conditions, indicated the need for the institution of routine control measures in normal years on all premises, including European farms, in malarious areas, and demonstrated the necessity for intensifying and increasing the rapidity of spraying operations by employing mechanised spraying squads, when epidemic conditions obtain.

It has, therefore, become evident that unless effective steps are taken to rectify the deficiencies in our malaria control system, all prospects of being able to relax anti-malaria measures in the future would have to be abandoned, and that the danger of the recurrent reappearance of epidemic conditions at intervals amongst a community with a lowered immunity could not be eliminated.

The following extensions of the Malaria Control Programme were

therefore/......

therefore recommended, and arrangements were made to carry them into effect during the 1953-54 transmission season,

(a) Imagocidal measures to be applied by the Malaria Control Unit to huts on all European farms and Crown Land in malarious areas

(b) Routine control measures to be extended to certain native areas in the South of Swaziland, which have hitherto been uncontrolled.

(c) The routine use of larvicides in supplementation of imagocidal measures on all irrigation schemes in the malarious areas of Swaziland

additional funds to the extent of £1,800 being provided for the purposes mentioned under (a) and (b)

During the months of August to October, 1953, the routine hut counting in Native Areas was extended to embrace African Compounds on European farms, African dwellings on Crown Land and those situated in additional Native Areas in the Mankaiana District, which it is proposed to incorporate in the malaria control programme commencing with the 1953/54 transmission season.

The preliminary survey has revealed that it will be necessary to treat an over-all total of some 120,000 huts, which is greatly in excess of the number (75,000) dealt with in previous years in which transmission conditions showed no marked deviation from normal.

Anti-larval work on irrigation schemes has been inaugurated in co-operation with farmers who are prepared to assist with the provision of labour and materials, and carry out the work under the supervision of the Medical Department. The institution of larvicidal measures on irrigation schemes must now become an essential part of the control programme, as owing to the prolific breeding of malaria vectors associated with such projects imagocidal control per se is insufficiently effective.

The parasite rate in children examined during the non-transmission season, i.e., in August and November, was 5%, and excluding subjects from European farms, the rate was 3.6% in controlled Native Areas. This increase of 1.5% is a residual effect of the 1952/53 season (which was of epidemic character), but it is hoped to reduce the figure below its pre-epidemic level by the intensification of anti-malaria measures during the present year.

In November, 1953, exceptionally heavy rains (average 11") fell throughout the territory, and this was followed by unusually heavy and early breeding of A. Gambiae in most of the bushveld areas. Except, however, for a few (11) adult mosquitoes detected during the check-spraying of huts, the vector has so far only been recovered in the larval stage.

In order to forestall early breeding, hut spraying operations were commenced at the beginning of November, instead of later in the months as in normal years, and the speed of spraying was increased by the use of Mobile Squads. At the same time larvicidal measures were undertaken mainly in connection with irrigation schemes where breeding was found to be heavy. By the close of the year, 50,000 huts in the bushveld had received the first spray treatment, and the African Compounds on European farms had also been dealt with.

The use of mechanical transport to expedite the work of the spray-gangs on European farms and in scattered Native Areas greatly facilitates control work, and although it involves additional expenditure, this is offset by a compensatory increase in the efficiency of the protection afforded.

Dieldrin/.... .

Dieldrin is under field trial in 300 huts in the vicinity of the Swaziland Irrigation rice fields, where the spraying was carried out in October. The results of this investigation, which is being carried out in association with an experiment conducted by the Resident Medical Officer, Swaziland Irrigation Scheme (C.D.C.) into the use of "Daraprim" (Pyrimethamine) (in weekly doses of 20 mg.) as a prophylactic, are awaited with interest, as multiple spraying is becoming increasingly expensive owing to rising labour costs.

(ii) Smallpox.

A number of alleged cases of smallpox were reported but on investigation all proved to be unfounded. In view of the low vaccinal state of children in the North-West Section of the territory, as disclosed during the school survey conducted in 1952, a vaccination campaign was carried out in that area, details of which are given below:-

Area.	Adults.	Children.	Total.
Emkaba	612	860	1472
Hebron	530	871	1401
Esipocosini	501	751	1252
Chief Jaha	584	433	1017
Usutu Forests	848	307	1155
Chief Mshinange	149	359	508
Malkerns	343	630	973
Totals	3567	4211	7778

During June the population of the following areas were immunised:-

Area.	Adults.	Children.	Total.
Mahlanya	155	172	327
Lobamba	460	636	1096
Ezulweni	530	730	1260
Chief Mvemve	180	307	487
Dlangeni	269	407	676
Totals	1594	2252	3846

In December, following an unconfirmed report of variola in the area of Nomahasha the following vaccinations were performed:-

Area.	Adults.	Children.	Total.
Nomahasha	353	639	992
Motshane	208	304	512
Totals	561	943	1504

The routine vaccination of police, prisoners and Medical Department staff was intensified in August.

(iii) Schistosomiasis.

(Hospital cases: In-patients 117
Out-patients 489)

606 cases were treated at the main hospitals during the year,

as compared with the following numbers during the previous seven years:

1952	650 cases
1951	604 cases
1950	642 cases
1949	424 cases
1948	530 cases
1947	354 cases
1946	470 cases

The case distribution by Districts was as follows, that for 1952 being shown in brackets:-

Mbabane-Mankaiana-Pigg's Peak District	40.9% (34.9%)
Manzini-Stegi District	39.0% (49.0%)
Hlatikulu District	19.9% (16.0%)

The routine Bilharzia Control measures were maintained in Bremersdorp township and its vicinity and the results are very promising. The need for the early introduction of Schistosomiasis control measures in connection with perennial irrigation projects is constantly being stressed by the Medical Department, in view of the serious danger to health associated with undertakings of this kind in areas in which the disease is endemic, but the response has not been encouraging. Proposals for instituting an epidemiological survey of Schistosomiasis on a territory-wide basis simultaneously with the introduction of supervisory control on irrigation schemes, (cost of molluscides, labour and equipment being borne by property owners) preparatory to the extension of molluscidal control to other areas of high actual or potential risk are under consideration.

Miracil D. hydrochloride, which has a high degree of efficiency (80-85%) in the treatment of S. haematobium infection is being used to a limited extent in the treatment of infected schoolchildren.

(iv) Tuberculosis (Pulmonary).

(Hospital Cases : 173 In-patients
203 Out-patients).

376 cases were attended to at hospitals, the numbers for previous years being as follows:-

1952		304 cases
1950		396 cases
1949	m	281 cases
1948		253 cases
1947		196 cases
1946		300 cases

The case distribution was as follows:-

Manzini-Stegi District	75.0%.
Mbabane-Mankaiana-Pigg's Peak District	12.5%
Hlatikulu District	12.5%

The percentage of tuberculosis admissions on total admissions at four of the hospitals in Swaziland is given below:-

Hospital.	Total Admissions.	Pulmonary.	Non Pulmonary.	Total Tuberculosis admissions.	% of Tuberculosis admissions on total admissions. 1953	1952
Mbabane	2542	29	38	67	2.6	1.6
Hlatikulu	1841	27	16	43	2.3	2.3
Mankaiana	946	1	3	4	0.4	1.4
Raleigh Fitkin Memorial Hospital	2918	131	12	143	4.8	3.9

The fifteen bedded Tuberculosis Block at the Arthur Matthews Methodist Mission Hospital at Mahamba is almost ready to receive patients, and the twenty-bedded Tuberculosis Block at the Raleigh Fitkin Memorial Hospital, Bremersdorp, is expected to be completed in March, 1954. A scheme for the provision of elementary facilities for the isolation and treatment of cases of Pulmonary Tuberculosis at Mbabane and Hlatikulu Hospitals is under consideration, and it is hoped that it will be possible to provide the necessary accommodation during the next financial year. Additional funds are also being sought for the purchase of special drugs for use in both Government and Mission hospitals in cases of Pulmonary Tuberculosis, Tuberculous Meningitis, and Miliary Tuberculosis. In consequence of the information disclosed by the Tuberculosis Chemotherapy Trials Committee of the Medical Research Council, in its Fifth Report, of the fact that P.A.S. (Sodium) 20 g. daily (5 g. four times per diem) plus Isoniazid 200 mg. (100 mg. twice per diem) has proved singularly effective both clinically and bacteriologically in the treatment of pulmonary tuberculosis, ranking in effect with the most efficacious chemotherapeutic combinations tested to date this combination will in future be used, in preference to other forms of treatment, on the grounds of ease of administration and reduction in cost, as compared with the Streptomycin, and the possibilities which it offers for domiciliary treatment in selected cases.

(v) Dysentery.

(Hospital Cases : In-patients 353
Out-patients 546)

The incidence of this group of diseases increased by 7.1% as compared with 1951.

The relative frequency with which the disease was encountered in its various forms is indicated below, the corresponding figures for 1952 being shown in brackets :-

Amoebic Dysentery	31.2%	(51.0%)
Bacillary Dysentery	68.1%	(47.5%)
Type undifferentiated	0.5%	(1.3%)

(vi) Gastro-enteritis and Colitis.

(Hospital cases	(a)	Between 4 weeks & 2 years	267 In-patients
			976 Out-patients
	(b)	Age 2 years and over	50 In-patients
			742 Out-patients
	(c)	Chronic enteritis and ulcerative colitis	2 In-patients
			- Out-patients.

The incidence ofthese conditions decreased by 6.2% as compared with 1952. The case distribution between districts, given below, is entirely dissimilar to that of the previous year, figures for which are shown in parenthesis -

Manzini-Stegi District	23.9%	(47.8%)
Mbabane-Pigg's Peak-Mankaiana District	35.7%	(27.9%)
Hlatikulu District	40.3%	(24.1%)

(vii) Venereal Diseases.

The cases treated at various institutions during the year under review are analysed in the table on page

The number of cases of syphilis and gonorrhoea presenting themselves for treatment in 1953 showed decreases of 10.1% and 5.8% respectively, as compared with 1952.

The variations in incidence in various areas during the last twelve months are tabulated below :-

Disease	Mbabane Hospital	Mankaiana Cottage Hospital.	Other Health Centres Mbabane-Pigg's Peak-Mankaiana Districts (Northern District)	Hlatikulu Hospital	Health Centres Hlatikulu (Southern District)	Arthur Matthews Methodist Hospital, Mahamba.	Raleigh Fitkin Memorial Hospital, Bremersdorp. Health Centres Manzini-Stegi (Central District)	Health Centres Manzini-Stegi (Central District).	District Surgeon, Stegi.	Lesters Health Centre	Lubuli-Gollel	Swaziland Irrigation Scheme (C.D.C)	Total
I. SYPHILIS.													
(A) Early Syphilis (i) Primary	274	245	-	34	-	-	137	-	-	-	-	-	690
(ii) Secondary	214	23	-	120	-	-	111	-	-	-	-	-	468
(iii) Early Latent (Asymptomatic)	386	-	-	78	-	-	-	-	-	-	-	-	464
(B) Late Syphilis Tertiary (i) Skin, mucosal, bone, muscle, joint.	3	-	-	-	-	-	11	-	-	-	-	-	14
(ii) Cardiovascular	-	-	-	-	-	-	-	-	-	-	-	-	-
(iii) Neurosyphilis	-	-	-	-	-	-	1	-	-	-	-	-	1
(iv) Late Latent (Asymptomatic)	-	-	-	1	-	-	2	-	-	-	-	-	3
(C) Congenital (i) Early (under 2 years of age)	85	49	-	29	-	-	34	-	-	-	-	-	197
(ii) Late (over 2 years of age)	-	38	-	2	-	-	-	-	-	-	-	-	40
(D) Undifferentiated	-	-	411	-	562	100	-	515	315	28	30	70	2031
TOTAL	962	355	411	264	562	100	296	515	315	28	30	70	3908
II. GONORRHOEA.													
(i) Acute	587	105	100	72	292	20	86	243	156	63	9	101	1834
(ii) Chronic	-	-	-	1	-	-	138	-	-	-	-	-	139
Total	587	105	100	73	292	20	224	243	156	63	9	101	1973
III. OTHER VENEREAL DISEASES	-	4	-	-	-	-	12	-	-	-	1	4	17
IV. RE-ATTENDANCES.													
Syphilis	6090	2072	1599	1273	2790	354	2721	3332	522	104	1	214	21072
Gonorrhoea	740	153	48	106	73	13	37	205	118	38	4	194	1729
Other Venereal Diseases	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Re-attendances	6830	2225	1647	1379	2863	367	2758	3537	640	142	5	408	22801

	Syphilis		Gonorrhoea.	
	Increase.	Decrease.	Increase .	Decrease.
Mbabane	49.0%	-	0.3%	-
Mankaiana	-	6.0%	6.9%	-
Mbabane-Pigg's Peak District	-	29.5%	8.7%	-
Hlatikulu Hospital	-	31.9%	-	24.7%
Goedgegun	-	4.2%	65.2%	-
Bremersdorp	-	21.3%	-	14.1%
Manzini-Stegi District (General)	-	9.8%	82.7%	-
Stegi (Nazarene Health Centre)	-	64.6%	27.4%	-
Stegi (District Surgeon)	-	11.2%	-	51.2%

The clinical trial of Procaine Penicillin G with aluminium monosterate (P.A.M.) as a single injection in the treatment of syphilis has been interrupted as a result of staff changes, but will shortly be resumed.

(viii) Typhoid and Paratyphoid Fever.

88 cases, with 6 deaths, were reported from the Mbabane-Pigg's Peak-Mankaiana District (34), Hlatikulu (28), and Manzini-Stegi (26) Districts during 1953. The incidence of the disease was 11.1% less than in 1952, but the case mortality was 6.8% as compared with 3.0% despite the increased use of Chloramphenicol which was administered in all severe cases.

Apart from an outbreak (8 cases) of the disease in widely separated compounds on the Swaziland Irrigation Scheme, during the month of May, and in connection with which 2185 Africans and 145 Europeans were immunised, the disease was sporadic in its incidence. Outbreaks in the following situations were also investigated by the Health Office Staff, Tawela (May), Mpisi Farm (September), Ngonini Estate (October), Bremersdorp Police Camp (December) and the innoculation of close contacts was carried out in those and various other areas throughout the territory. In many instances the services of the Public Health Laboratory were enlisted in the search for carriers amongst contacts and food-handlers.

(ix) Diphtheria.

Eleven cases, with 4 deaths, occurred as compared with 8 cases and 2 deaths in 1952. Six of the cases were reported from the Mbabane-Pigg's Peak- Districts and five from the Manzini District. All cases were carefully investigated, all close contacts being examined bacteriologically and immunised whenever necessary.

(x) Whooping Cough.

The incidence of this disease was similar to that of 1952, and the case distribution was as follows:-

District	No. of cases	Deaths
Manzini-District	224	2
Mbabane-Pigg's Peak-Mankaiana District	104	1
Hlatikulu	81	1
Havelock Mine	10	0
Total	419	4

In/.......

In contradistinction to 1952, the disease this year was less prevalent in the Mbabane area.

(xi) Acute Poliomyelitis.

No case was reported in 1953.

(xii) Measles.

573 cases were reported, as compared with 186 in 1952. As will be observed from the following table, the prevalence of the disease was greatest in the Manzini District, the majority of cases occurring in that area during the first six months of the year.

District.	Cases.	Deaths.
Manzini District	273	-
Mbabane-Pigg's Peak-Mankaiana District	138	-
Hlatikulu	135	-
Havelock Mine	27	-
Total	573	-

(xiii) Chicken Pox.

202 cases were recorded, as against 186 in 1952. The bulk of the cases occurred in the Havelock Mine area and the vicinity of Mbabane, and only 9 cases were detected in the Hlatikulu District.

(xiv) Relapsing Fever.

One case was reported from the Mbabane District.

(xv) Tick Typhus.

Thirteen cases were reported from the Mbabane District, and a similar number occurred in the Manzini District. No cases were notified from the Hlatikulu District nor from the Havelock Mine area. As in 1952 the seasonal distribution of the disease was irregular. The highest incidence occurred during the first quarter of the year, the disease being particularly prevalent in February.

(xvi) Influenza.

The incidence of this disease was 20.8% greater than in 1952, which was itself 38.7% more than in 1951 and as usual the prevalence of the disease was greatest in the areas served by Mbabane Hospital. The disease was most frequently met with during the third quarter of the year.

The case distribution by districts was as follows :-

Mbabane-Pigg's Peak-Mankaiana District	808
Hlatikulu District	301
Manzini-Stegi District	238
Havelock Mine	200

(xvii) Cerebro-spinal Meningitis.

Fourteen cases with four deaths occurred as against 9 in 1952. Eleven cases (2 deaths) were notified from the Havelock Mine, where they were distributed over a seven months period extending from March to November. The remaining 2 cases were reported from the Mbabane District.

(xviii)/........

(xviii) Epidemic Parotitis.

132 cases were reported, of which 50 occurred at the Havelock Mine. The distribution of the remaining cases was as follows:-

Mbabane	44
Hlatikulu	33
Manzini area	5

(xix) Infectious Mononucleosis.

No cases were reported during the year.

(xx) Leprosy.

The staff of the Mbuluzi Leper Hospital consisted of the Medical Superintendent (non-resident), an European Matron, 2 Nurses, a Teacher, a Chaplain and Liason Officer and two labourers.

The number of in-patient on the 31st December 1953 was 46, i.e. 14 adult males, 24 adult females, 4 male and 4 female children, as compared with 43 at the end of 1952. The average daily number of patients was 40 as against 52.9 in the previous year, which represents a further decrease of 24.3% in the population of the institution. In contrast with last year, there were 8 children amongst the 29 admissions.

Treatment with sulphone drugs was continued throughout the year, and the steady improvement in all patients was maintained. Many of the patients were in a poor nutritional state when admitted, and their state of moral was at a low level. Good feeding, hygienic surroundings, have had a beneficial effect on their general health, and most of them have engaged in various forms of occupational therapy. Isoniazid and Para-aminosalicylic acid (P.A.S.) are on trial at the Settlement.

Health of Patients.

The general health of the patients has been good. A few have suffered from lepra reaction, many from trophic ulcers of hands and feet, arising mainly as a result of injuries and burns to extremities which have lost all sense of sensation through leprotic damage to nurves.

Additions to Population.

	Males	Females	Total
Admissions	12	11	23
Re-admissions	-	6	6
Desertions	-	-	-
Totals	12	17	29.

Losses in Population.

	Males	Females	Total.
Deaths	1	-	1
Desertions	1	2	3
Discharges	12	10	22
Totals	14	12	26

Origin/.......

Origin of Patients Admitted.

District.	Males	Females	Total	%
Mbabane	5	5	10	34.5
Mankaiana	5	4	9	31.1
Stegi	1	-	1	3.4
Bremersdorp	2	2	4	13.8
Pigg's Peak	1	3	4	13.8
Hlatikulu	-	1	1	3.4
Totals	14	15	29	100.00

Duration of Disease before Admission.

Duration	Admissions	Percentage
0 - 1 years	10	34.5
1 - 2 years	3	10.3
2 - 3 years	4	13.8
3 - 4 years	1	3.5
4 - 5 years	2	6.9
5 plus	9	31.0

Classification on Admission.

Classification	Admissions	Percentage
Lepromatous	8	27.6
Neural	19	65.5
Combined Neural and Lepromatous	2	6.9

Of the 46 patients in the colony, the following gives the type of the disease according to sex:-

Type	Male	Female	Total	Percentage
Lepromatous	10	10	20	43.5
Neural	6	17	23	50
Neural & Lepromatous	2	1	3	6.5

Average age on admission: was 25 years.

Proportion of Children to Total Admissions.

There were 8 admissions of children under the age of 16 years out of a total of 29 admissions, i.e. 27.6%.

Treatment (General).

The attendances at the Dispensary were 17,293, as compared with 18,895 in 1952 and 23,734 in 1951.

31 patients were admitted to the Hospital wards during 1953; the total Hospital in-patient days being 2,004, as against 1,856 in 1952.

The/.......

The following were the diseases treated:-

Trophic ulcer	12
Burns	12
Lepra reaction	3
Blindness	2
Arthritis	1
Tuberculosis of Spine	1
	31 (2,004 In-patient days).

Anti-Leprotic Treatment.

Practically the only form of therapy used was Diaminodiphenylsulphone (D.A.D.P.S.) in tablet form by mouth. Dosage varied from 1 tablet (0.1 gram) once a week to 1 tablet three time a day in certain cases. This had been combined with iron and Vitamin B in the form of Blaud's Pills and yeast tablets. A few have been treated with Isonicotinyl hydrazide in conjunction with D.A.D.P.S., but it has been difficult to detect any marked improvement as resulting from this combined therapy. At present a few patients are being treated with combined Isoniazid and P.A.S. therapy, and the use of streptomycin is being considered in certain cases, which may be slow to show improvement after trial of the above remedies. The use of Chaulmoogra Oil and its derivatives has been discarded.

Laboratory Examinations.

215 smears from patients were examined during the year for the presence of M.leprae with the following results:-

Type	Positive		Negative		Total.
	Nasal	Skin	Nasal	Skin	
Lepromatous	-	37	-	76	113
Neural	-	4	-	94	98
Combined	-	2	-	2	4
Totals	-	43	-	172	215

Vital Statistics.

The population figures drived from the latest (1946) Census are given below:-

	Males	Females	Total
Europeans	1727	1474	3201
Coloured	359	380	739
Swazis	91014	87617	178,631)
Foreign Natives	2371	267	2,638) 181,269
Asiatics	5	1	6
Total	95476	89739	185,215

Total/........

Total European Population	3201
Total European Births	80
Total European Deaths	23
Birth rate per 1000	24.9
Death Rate per 1000	7.1
Infant mortality rate	12.5

Table showing causes of Death:

Causes of Death	Number of Deaths
Diseases of the heart, and other diseases of the Circulatory System	12
Violence	-
Carcinoma	2
Diabetes Mellitis	2
Intestinal Obstruction	1
Pneumonia	1
Senility	2
Violence	1
Other Causes	2
Total	23

Registration is not compulsory in the case of the Non-European population.

III. HYGIENE AND SANITATION.

A. (i) Preventative Measures.

(a) Malaria. As previously described, the work of the Malaria Control Unit has once again been increased, 154,585 huts being sprayed with Benzenehexachloride as compared with 73,000 in 1952, 36,550 in 1951, and 23,000 in 1950. 1953 was the first occasion on which larvicidal operations were employed to augment imagocidal measure in areas other than the townships of Bremersdorp and Stegi and the Swaziland Irrigation Scheme (CDC).

(b) Smallpox. Small-scale vaccination campaigns were conducted in several areas during the year.

(c) Typhoid and Paratyphoid Fevers and other Salmonella infections.

All outbreaks were investigated and the usual prophylactic measures were instituted in each instance. Advice regarding preventive measures was communicated to the public through the medium of the press.

(d) Diphtheria and Whooping Cough. The immunization of children against both these diseases is carried out as a matter of routine, but on a limited scale.

(e) Schistosomiasis. On re-examination of the group of children at the Government School at Bremersdorp, amongst whom the infestation rate was 19.7% in 1952, if was found that of 79 examined 3 (3.82) were infected, and these were successfully treated with "Nilodin". Preparations have been made for the investigation of the incidence of S. mansoni infestation , the existence of which is suspected but as yet unconfirmed. The Bilhariasis Control Measures which were inaugurated in September 1952, in the neighbourhood of Bremersdorp, were continued during 1953, but the work was interrupted in the early part of the year when all available health personnel were diverted to deal with the malaria epidemic which was then threatening

the/.....

the territory. During this period (December 1952-April 1953), snails became re-established and a survey carried out in April revealed Lymnaea, Physopsis and Biomphalaria (Planorbis Species) in various stages of development at numerous points in the Mzinene River and its tributaries. Spraying with copper sulphate solution was carried out in May and June, special attention being given to the sections in which the concentration of molluscs was most dense. Subsequent to sulphation, an intensive search for snails was instituted, and conducted at weekly intervals until the first young snails (Lymnaea Caillaudi (Natalensis)) reappeared during September, small numbers of physopsis globosa (Africana) and Biomphalaria (Planorbis) being detected after a short interval. Copper sulphate was reapplied during October, when the water in streams, pools etc., was at its lowest level. In November and December the fast-flowing Mzinene River was in full flood on several occasions, and no snails were found during this period.

(ii) General Measures of Sanitation.

(a) Despite the widespread and increased use of Benzenehexachloride as an anti-malaria measure, flies have been extremely prevalent this year in bushveld areas. The extension of spraying with the same insecticide to Cream Depots and Dairies by Medical Department Staff is reported by the Dairy Officer to have given satisfactory results, in that the number of flies in the vicinity of dairies has greatly diminished. On the other hand there is evidence to suggest that at certain farms where spraying has been carried out for two or three years in succession, flies have developed a resistance to D.D.T in kerosene and B.H.C. in water. This is an observation of considerable significance in view of the warning it may hold in respect of the possible development of acquired resistance of other insects, flies being the first to exhibit this tendency, as was the case in Greece in 1947. Whenever resistance to residual insecticides has been observed, residents have been advised to employ a "knock-down" insecticide such as "Pyagra" and revert to the use of pre-baited fly traps which have been effectively used for fly-prevention in association with local abattoirs. An experiment is being carried out on a farm in the Big Bend area of the Usutu River with a view to determining the action of Dieldrin on adult flies which have developed a resistance to other residual insecticides.

(b) Water Supplies. Bacteriological analyses of treated water supplies were carried out as a matter of routine.At Bremersdorp a new pumping-unit and two new pressure filters and chemical dosers were installed, thus temporarily overcoming the former inadequacy of the supply. The new gas chlorinator has been entirely unsatisfactory in operation. A scheme prepared by the Consulting Engineers for the improvement of the water supply at Stegi has been approved, and it is expected that work on this project will be carried out in 1954. At Goedgegun, untreated water is still distributed to householders. The Hlatikulu water supply is derived from a small stream within the Urban Area, the water being chlorinated and pumped to a reservoir on the top of a hill. A larger storage reservoir to impound the water in the valley, prior to chlorination, is being planned. The installation of the new water supply for Mbabane is being proceeded with,and is due to be completed by June 1954.

Analyses of a water specimen from the Mhlambanyati River showed 39 parts of salts p.m., a p^H of 8.4, 5, 7, 3 and 1 parts of sodium,calcium, magnesium and fluorine p.m. No iodine was detectable.

(c) Conservancy and Refuse Disposal. Consequent on the improvement of the water supply at Bremersdorp, all pail closets which were still in existence at Government houses, occupied by Europeans and Africans, have been replaced by latrines of the water-borne type. It is now proposed to extend the use of

septic/.....

septic tanks to private stands, with the intention of ultimately dispensing with the use of bucket-latrines within the urban area. The disposal of refuse and night-soil in townships is carried out by convict labour under the supervision of the Town Inspectors. A refuse removal service has been planned for the central area of the Mbabane Township and it is hoped that it will be put into operation in 1954.

(d) Drainage. As the result of action taken by the Health Authorities the discharge of waste-water from commercial premises into the Mzimneni River, at Bremersdorp, has diminished considerably. At the Government abattoir, Bremersdorp, a system of French Drains was introduced with success and this method of disposal is being adopted by the Bremersdorp Hotel. The Bremersdorp Creamery has acquired a stand between its property and the river, which will be used solely for drainage purposes.

(e) Bush-clearing. The response to Sanitary Notices served on numerous property owners, in connection with the clearing of weeds and undergrowth from vacant stands in Urban areas has been fairly satisfactory. Local authorities have been urged to keep Government premises and side-walks from becoming overgrown. The Urban Areas Regulations have been amended to compel those intending to construct drainage works on old and new property to submit plans for prior approval by the Local Authority.

(iii) School Hygiene. The routine medical inspection of school children was carried out at St. Mark's School, the Trades School, Mbabane, the Swazi National School, Matapha, and Goedgegun European School, by the District Medical Officers concerned. The systematic examination of children at the following boarding schools was temporarily suspended as a result of staff changes: Little Flower, Bremersdorp, St. Joseph's, St. Michael's (Coloured), Our Lady of Sorrows, Hluti and the Mbuluzi Girls School.

(iv) Labour Conditions. The larger irrigation companies, whose projects are now in the course of development, have been advised regarding the design and siting of the buildings to be provided for the accomodation of their staff. Special attention has been paid to the provisions of latrines and ablution facilities.

(v) Buildings. The position with regard to uncontrolled development in the urban and peri-urban areas, and in village settlements on Native Areas remains unsatisfactory, and in the latter instance requires the introduction of new legislation if these undesirable tendencies are to be corrected. 60 new Government building plans of a total value of £106,700 were submitted by local authorities for examination by the Medical Department. Routine inspection of buildings was carried out by the Health Inspector.

Two new houses for European Officials were erected at Mbabane (1 "G3" type and 1 "G4") and one ("G2") at Bremersdorp. One ("G2") additional house was under construction at Mbabane at the end of the year. Two N.F.2/50 type houses for African Officials were built at Stegi and 2 others of the same type were completed at Hlatikulu.

(vi) Food in relation to disease.

(a) Trade Premises. Routine inspection of premises in which foodstuffs are handled was carried out in all the Urban Areas. The extent of this work was greatly restricted during 1953, as the Health Inspector was compelled to devote an unusually large proportion of his time to Bilharziasis and Malaria Control Measures. The number of inspections are listed overleaf :-

General/.......

General Dealers	105
Butcheries	74
Slaughter Houses	55
Bakeries	20
Native Eating Houses	19
Hotels	12
Restaurants	8

15 tins of canned fruit and 12 tins of fish were condemned as unfit for human consumption.

(b) Meat Supplies. Certainsimprovements to the Abattoir Building at Bremersdorp were completed in September, and routine meat inspection, which was discontinued in March 1951, was resumed on 1st October 1953. Baber's fly-traps were erected at the abattoir premises at Goedgegun, Hlatikulu, Bremersdorp and Stegi, for the temporary storgae of manure. Owing to drainage difficulties and the disproportionate cost which renovations to the existing building would entail, a new site has been selected for the Mbabane abattoir and the building is approaching completion.

Figures relating to meat inspection during 1953 are as follows :-

Place.	Inspected.			Condemned for measles & destroyed			Measley Carcases passed for treatment		
	Cattle	Sheep	Pigs	Cattle	Sheep	Pigs	Cattle	Sheep	Pigs
Mbabane	145	61	27	-	-	2	4	-	-
Stegi	171	19	-	-	-	-	12	-	-
Hlatikulu	161	2	2	6	-	1	2	-	-
Goedgegun	227	9	17	1	-	-	-	-	-
Bremersdorp, 1st October to 31st December	338	58	62	4	-	-	58	-	-

In the absence of a sufficient number of qualified Meat Inspectors, the Principal Veterinary Officer arranged for certain Stock Inspectors to be trained to detect cysticercosis in slaughter animals, infected meat being detained for confirmation by a Medical Officer, Veterinary Officer or Health Inspector whenever such a course is practicable. A Bremersdorp butcher is erecting a "deep-freezer" to hold 10 carcases, with a view to reducing losses through condemnation. Farmers are being encouraged to undertake preventative measures on their farms in order to eliminate factors which favour the dissemination of cystericercosis.

B. Measures taken to spread the knowledge of Hygiene and Sanitation.

In co-operation with the Education Department courses in hygiene were arranged for African school teachers at Bremersdorp and Mbabane. The lectures covered a wide range of subjects and were supported by films obtained from the United States Film Library in Johannesburg. Instructional pamphlets, provided by the South African Red Cross Society, were distributed to teachers. Health lectures were given by the Health Inspector to cattle guards at Mpisi Government Farm, as part of their standard training. At the request of the Principal Education Officer, a lecture of Bilharziasis was given by the Medical Officer (Health) to members of the African Women's Club at Bremersdorp.

C. Training of Personnel.

The following student-nurses were undergoing training at the Ainsworth Dickson Nursing School (Raleigh Fitkin Memorial Hospital), Bremersdorp on 31st December 1953 :-

1st year/.......

1st year	9
2nd year	14
3rd year	4
4th year	1
	28

The results of the examinations conducted during the year are as follows:-

Certificate	Preliminary		Final	
	Passed	Failed	Passed	Failed.
High Commission Territories Nursing Council.				
General Medical & Surgical	5	4	2	-
Midwifery, Part I	2	-	-	-
Part II	-	-	3	-
Swaziland Executive Nursing Committee.				
Preliminary Examination	9	-	1	-

IV. MATERNITY AND CHILD WELFARE.

(a) Mbabane, Pigg's Peak and Mankaiana District.

30 Europeans and 660 African attended the weekly ante-natal clinic at Mbabane Hospital, and 369 deliveries were conducted as compared with 268 in 1952. There were 200 and 90 attendances of infants and mothers at the Child Welfare Clinic at Matapha, and three confinements were conducted by the School Nurse.

The number of maternity cases dealt with at Health Centres is given in the following table :-

Health Centre	No. of Cases.
Mankaiana	98
Horo	22
Government Farm	22
Hebron	5
TOTAL	147

(b) Manzini and Stegi District.

Raleigh Fitkin Memorial Hospital, Bremersdorp.

Ante-natal attendances	2550
Child Welfare attendances	3511
Confinements	391

Table/..........

Table showing the number of maternity cases at Nazerene Mission Health Centres.

Health Centre	No. of cases
Stegi	80
Endingeni	75
Pigg's Peak	81
Mliba	18
Mafuteni	15
Bhekinkosi	2
Balegane	6
Malinda	10
Ebenezer	32
Mayiwane	7
TOTAL	326

(c) Hlatikulu District.

Clinic	Ante-Natal First Attendances	Confinements.
Hlatikulu Hospital	436 (7)	152 (7)
Goedgegun	825 (25)	-
Mhlotsheni	189 (3)	-
Hluti	64	-
Sipofaneni	140	-
St. Phillips	244	-
Our Lady of Sorrows	-	7 (3)
Lubuli-Gollel	63	-
Lubuli Health Centre	95	-
Mahamba Hospital	-	18 (2)
TOTALS	2056 (35)	177 (12)

(The figures in brackets relate to Europeans).

V. HOSPITALS AND DISPENSARIES (HEALTH CENTRES).

(a) Mbabane Hospital.

Number of beds (European)	10
Number of beds (African)	98
Number of Cots (African)	20

In December, work was resumed on the construction of the new laundry, the installation of the machinery and the completion of the Cold Room, the work on which was suspended in March 1952.

Daily average number of In-patients (European)	5.0
Daily average number of In-patients (Eurafrican)	0.6
Daily average number of In-patients (African)	108.2

The corresponding figures for the past seven years are given in the following table :-

Year.	Daily average No. of In-patients.		
	European.	Eurafrican	African
1946	0.9	0.15	74.9
1947	0.65	0.42	69.6
1948	0.88	0.65	71.1
1949	1.2	0.59	79.5
1950	1.2	1.1	72.2
1951	1.3	0.8	88.7
1952	3.2	0.5	101.0

Staff.

2 European Medical Officers.
1 African Medical Officer.
5 European Nursing Sisters.
1 Dispenser-Storekeeper-Radiographer
1 Hospital Assistant
1 African Dispenser
1 African Wardmaster
24 African Nurses
1 Dispensary Orderly
2 Out-patient Attendants
9 Ward Attendants
2 Nurse-Aides.

	1946	1947	1948	1949	1950	1951	1952	1953.
Admissions	2287	2217	2210	2237	1966	2491(92)	2557(170)	2795(253)
Deaths	41	28	51	55	57	49(3)	72(3)	80(7)
Confinements	170	303	339	299	276	318(14)	268(28)	372(30)
Operations	215	193	297	398	441	389(91)	555(183)	772(236)
Out-patients (new cases)	8916	8547	8945	9422	12893	14159(2712)	13287(2699)	15348(3769)
Out-patients (re-attendances	3913	6953	9173	11472	14059	15496(3354)	13722(3715)	16912(4810).

(Note: European cases, which are included in the totals are shown in brackets).

The already high level of European Out-patient attendances at Mbabane Hospital shows a further increase, and the following table is provided for the purpose of comparison with the work at other District Hospitals.

Station				Average No. per Month.			
		New Cases		Re-attendances		New Cases	
		Male	Female	Male	Female	Officials	Non-officials
Mbabane	1946	53.2	56.9	33.9	51.3	-	-
	1947	55.3	54.6	54.5	54.3	-	-
	1948	61.1	57.4	68.2	82.1	19,6%	80,3%
	1949	86.1	77.6	67.6	106.6	18.7%	81.3%
	1950	125.5	102.2	136.5	142.5	18.7%	81,2%
	1951	128.3	108.3	138.6	123.5	11.4%	88.5%
	1952	124.1	101.0	140.7	123.8	13.8%	86.1%
	1953	156.3	129.3	187.1	214.0	13.4%	86,2%
Bremersdorp.	1952	62.5	55.6	19.5	17.9	12.3%	87.6%
	1953	64.5	42.5	14.9	8.4	5.4%	94.5%
Hlatikulu	1952	16.4	15.3	44.1	22.7	9.1%	90.8%
	1953	21.8	22.2	25.0	28.4	15.2%	84.7%

(b) Hlatikulu Hospital.

Number of beds (European)	8
Number of beds (Eurafrican)	3
Number of beds (African)	30
Number of cots (African)	3

Daily average number of In-patients (European)	1.4
Daily average number of In-patients (Eurafrican)	1.0
Daily average number of In-patients (African)	73.3

comparative/....

Comparative figures from 1946 onwards are given below :-

Year.	Daily average number of In-patients		
	European	Eurafrican	African
1946	2.5	0.7	65.2
1947	3.33	0.61	65.2
1948	2.54	0.46	74.5
1949	1.7	0.52	66.6
1950	1.5	0.4	63.6
1951	2.0	0.7	72.5
1952	1.4	0.9	80.1

Staff.

2 Medical Officers
4 European Nursing Sisters
1 Intern (post vacant)
1 European Hospital Assistant/Dispenser,
1 African Hospital Assistant,
1 African Laboratory Assistant,
1 African Dispenser
15 African Nurses
1 Dispensary Orderly
5 Ward Attendants

	1946	1947	1948	1949	1950	1951	1952	1953.
Admissions	2245	1647	1313	1483	1814	1896(141)	1900(96)	1923(82)
Deaths	46	43	50	56	59	55(0)	54(1)	55(0)
Confinements	150	188	198	202	159	148(19)	170(16)	124(6)
Operations	112	256	241	242	258	299(34)	542(43)	179(23)
Out-patients (New cases)	12145	6955	5169	4414	5676	7009(369)	8298(410)	8117(529)
Out-patients Re-attendances	12145	2342	2894	3549	2803	1700(330)	3336(806)	3396(639)

The scheme for improving the facilities at the hospital has again been revised, and it is expected that work on the extensions will be resumed during 1954. One of a set of two new Diesel-operated electric generating plants was installed and put into commission on 8th December 1953.

(c) Raleigh Fitkin Memorial Hospital, Bremersdorp.

Number of beds (European)	8
Number of beds (African)	68
Number of beds (Eurafrican)	4

Admissions.

Year	European	Eurafrican	African	Deaths
1946	281	116	2154	42
1947	264	117	1814	60
1948	232	92	2082	82
1949	201	80	1823	83
1950	228	92	2305	110
1951	274	64	2760	95
1952	197	66	2852	84
1953	260	83	2975	91

Daily/.....

Daily average number of In-patients (European)	4.2
Daily average number of In-patients(Eurafrican)	1.4
Daily average number of In-patients (African)	107.0

Out-Patients.

Year	New Cases	Re-attendances	Totals
1946	5540	5500	11040
1947	5283	4680	9963
1948	9253	8314	17567
1949	9404	8620	18024
1950	10853	9853	20706
1951	11688	9700	21388
1952	11383	9134	20517
1953	9999	10746	20745

Staff.

1 Medical Superintendent,
1 Medical Officer,
13 Nursing Sisters,
2 Bookkeepers,
1 Laundry Supervisor
1 Secretary
1 Dispensary Assistant
1 Housekeeper
1 Radiographer (Part-time)
1 Laboratory Assistant
1 African Nursing Sister
12 African Nurses
28 Probationer Nurses
6 Nurse Aides
1 African Dispensary Assistant
20 Maids.

(d) Havelock Mine Hospital, Emlembe.

Figures relating to members of the General Native Population treated at the Mine Hospital are given in the following table :-

	1946	1947	1948	1949	1950	1951	1952	1953.
Admissions	141	113	81	189	175	68	89	124
Out-patients (New cases)	333	47	79	79	88	559	546	613
Re-attendances	2285	128	147	395	124	535	1239	779
Daily average number of In-patients	3.3	3.4	2.7	4.18	5.0	1.35	1.9	2.3

(e) Arthur Matthews Methodist Mission Hospital, Mahamba

The Government subsidy to this institution was increased from £840 to £1,140 per annum, with effect from 1st April 1953. Figures relating to the work carried out at this institution are given in the following table :-

	European	African
Admissions	26	384
In-patient days	117	2786
Confinements	2	18
Deaths	1	13
Operations (Major)	1	7
(Minor)	22	25

Out-patients/...

	European	African
Out-patients (new cases)	118	1340
Out-patients (re-attendances)	179	2379
Malaria Cases	-	18
Bilharziasis	-	23

(f) Swaziland Irrigation Scheme (C.D.C)

The medical work performed on this project is summarised as below:-

	Europeans		Africans		Totals
	E	GNP	E	GNP	
Admissions	84	8	321	6	419
In-patient days	597	49	1512	42	2200
Confinements	1	-	24	1	26
Deaths	-	-	15	-	15
Out-patients (new cases)	327	8	3999	256	4590
Out-patients (re-attendances)	476	4	4151	300	4931
Operations	21	2	142	9	174
Malaria	9	1	187	4	202
Bilharziasis	-	-	48	6	54

(Note: E = Employees and dependents.
GNP = Non-Employees).

(g) Dispensaries (Health Centres).

The numbers treated at Dispensaries throughout the territory are shown in the following table :-

Government Health Centres.

Dispensary.	In-Patients.	Out-Patients.			
		New Cases		Re-attendances.	
		E	N.E.	E.	N.E.
Horo	-	5	3488	-	608
Hebron	-	-	957	-	396
Government Farm	-	1	1284	-	555
Goedgegun	-	275	4039	161	1110
Mhlotsheni	-	78	1634	89	415
Hluti	-	124	1260	6	529
Lesters	-	7	1098	1	833
Sipofaneni	-	5	1155	2	365
St. Phillip's	-	2	2225	-	1087
Our Lady of Sorrows	-	80	4624	21	447
Lubuli-Gollel	-	26	1400	-	34
Total	-	603	23164	280	6379
Mankaiana Cottage Hospital x	960	28	7347	30	3609

("E" = Europeans, "N.E." = Non-Europeans, "x"= figures additional to those shown in the Return of Diseases for Government Hospital (Appendix I))

The new Health Centre at Lubuli in the Hlatikulu District, which

was erected and equipped as a charge against Colonial Development & Welfare Scheme No. D. 1503, "Extensions of Medical Services in the Lowveld", was opend on 2nd December 1953, and, as in the case of Lester's Health Centre, the Swazi National Treasury has assumed financial responsibility for its staffing and maintenance.

The Centre is supervised by the Medical Staff at Hlatikulu Hospital.

The attendances at Health Centres during the last eight years are summarised in the following tables :-

(i) Health Centres (General).

Year.	New Out--Patients	Re-attendances	Total attendances	Confinements
1946	15201	4288	19429	68
1947	14109	8151	22260	47
1948	15347	14235	29582	34
1949	16893	12110	29003	38
1950	19285	13864	33199	34
1951	22214	17787	40001	67
1952	22353	12962	35315 x	43
1953	23767	6659	30426 x	56

(x Note - Mahamba figures (3719) not included).

(ii) Mankaiana Cottage Hospital (16 beds).

Year	Admissions	Out-patients					Confinements
		New Cases		Re-attendances		Total attendances	
		E.	N.E.	E	N.E.		
1946	957	25	7244	10	3135	10414	122
1947	734	36	5693	19	3999	9747	100
1948	762	43	6727	47	2853	9670	94
1949	736	38	7289	59	3030	10416	114
1950	797	29	7147	54	3966	11196	110
1951	829	61	6287	83	3400	9831	95
1952	835	56	6119	98	3225	9498	98
1953	960	28	3747	30	3609	11014	98

The average number of in-patients per day at this centre was 30.7, as compared with 30.0 in 1952, and is the highest recorded.

(iii) Cases treated at Nazarene Mission Health Centres.

Health Centre.		Out-patients			
		New cases		Re-attendances	
		E	N.E.	E.	N.E.
Stegi	x	132	4314	71	2968
Endingeni	x	14	3950	27	1811
Pigg's Peak	x	110	4032	64	3687
Mliba	x	-	730	-	1302
Mafuteni		-	355	-	2041
Bhekinkosi		-	403	-	899
Balegane		-	668	-	913
Malinda		-	763	-	700
Ebenezer (Pilgrim Holiness Church)		13	2602	-	544
Mayiwane		-	990	-	725
Totals		269	18807	162	15590

"x" /....

"x" = subsidised by Government.

The total attendances at the Nazerene Mission Health Centres was 34,828, as compared with 27,481 in 1952, and 30,320 in 1951.

(iv) District Surgeon, Stegi.

The cases treated by the District Surgeon, Stegi, are shown in the following table :-

	New Cases		Re-attendances	
	M	F	M	F
European Officials	105	30	69	23
European General Population	166	117	126	115
African Officials	695	244	75	136
General Native Population	1495	2965	204	246
Eurafricans	77	69	46	33
TOTALS 1953	2538	3425	520	553
	5963		1073	
TOTALS 1952	5255		1653	
TOTALS 1951	4084		4923	

The Good Shepherd Mission Hospital was opened in December and 27 patients were admitted before the close of the year.

VI. PRISONS.

Weekly visits were paid to the Mbabane, Bremersdorp and Hlatikulu prisons, by District Medical Officers, and in all cases, the health of the prisoners was satisfactory.

VII. SCIENTIFIC.

Particulars of the laboratory work, performed at the main centres in the territory, are given in the following table :-

	Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital.
Blood Films	6307	489	653	375
Total Blood Counts	97	-	227	-
Throat Swab Cultures (C. Diphtheriae)	44	-	-	-
Bacteriological Smears)	143	2604	420	6
Faeces)	-	1096	691	93
Urines)	-	3138	2181	3390
Sputa)	-	1108	754	293
Serological tests for syphilis	7653	-	-	-
Identification of adult mosquito	531	-	-	-
Identification of mosquito larvae	1150	-	-	-
Identification of snails	1130	-	-	-
Biochemical tests	30	-	-	-
Blood & Stool Cultures	158	-	-	-
Agglutination tests	287	-	-	-
Cerebrospinal fluids	-	6	-	-
Sedimentation Rates	8	-	480	-
Unspecified	-	-	254	-

Totals/...

	Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital.
Totals 1953	17538	8441	5660	4157
1952	11293	7215	3189	3475
1951	14077	5867	2066	4760
1950	14770	4279	1746	5981
1949	13688	3619	1220	4919
1948	15641	2865	1813	4912
1947	16428	2015	1427	3903

The number of specimens dealt with by the Public Health Laboratory increased by 55.1% as compared with 1952.

VIII. (a) MEDICO-LEGAL WORK ETC.

	Mbabane Pigg's Peak & Mankaiana District.	Hlatikulu District	Manzini & Stegi District	Total
Post Mortem Examinations	24	25	32	81
Examinations for Assault etc	41	79	176	296
Examinations for Tax Exemption	92	101	81	274
TOTALS	157	205	289	651

(b) RADIOLOGICAL EXAMINATIONS.

	Mbabane Hospital		Hlatikulu Hospital.		Raleigh Fitkin Memorial Hospital		TOTAL
	E	A	E	A	E	A	
Screenings	2	1	14	84	-	-	101
Radiographs	270	540	27	158	82	569	1646
TOTAL	272	541	41	242	82	569	1747

During 1953, there was a further increase (14.6%) in the radiological work carried out at District Hospitals.

Once again, it is my privilege to record my appreciation of the devoted manner in which all members of the staff of the Department performed their duties.

J. C. J. CALLANAN

DIRECTOR OF MEDICAL SERVICES.

ANNUAL REPORT 1953.

PUBLIC HEALTH LABORATORY, BREMERSDORP.

A. GENERAL.

During the year Miss H. Bredell, Laboratory Assistant, was absent on four months' overseas leave.

No change occurred in Senior African Staff, or in African Staff numbers.

B. MALARIA.

Owing to the abundant and widespread breeding of A. gambiae which resumed an epidemic character comparable with that observed in the territory during the seasons of 1939 and 1946, malaria control operations had to be stepped-up.

All huts in bushveld areas received three treatments with a residual insecticide (B.H.C. 10% gamma content) instead of the usual two treatments in normal years. Control operations had also to be extended into high and middleveld areas usually free of malaria. A total of 155,000 huts (or rooms) was treated during the season, in comparison with the figure 73,000 in 1952. In addition, anti-larval work in the areas of Bremersdorp and Stegi and on the property of the Swaziland Irrigation Scheme was increased.

The following table represents the total monthly cases of malaria diagnosed in the laboratory. For comparison, the figures for the pre-control epidemic year 1946 are also listed.

MONTHDY TOTAL MALARIA CASES AS DIAGNOSED IN THE LABORATORY.

	1952/53	1945/46.
November and December	15	... 180
January	250	... 245
February	224	... 204
March	151	... 1270
April	78	... 2494
May	46	... 1350
	764	5743

These case-totals include all slides sent to the laboratory; i.e. those submitted by local hospitals and health centres (totalling 745), as well as those random-samples submitted by field staff (totalling 5,567)

From the table it can be seen that by March of this year the epidemic was well under control, a marked decline of cases occurring over the peak months of transmission, March and April. Comparison between the two entomologically identical transmission seasons 1946 and 1953 shows clearly the marked difference in malaria-case numbers observed over these two years, a difference which must be attributed to malaria control measures adopted in the territory.

In a paper entitled "Observations of Two Epidemic Malaria Seasons (1946 and 1953) in Swaziland - Before and After Control" (in print), reasons for the break-through in the early months of transmission, especially in the Southern Areas of Swaziland, were discussed. This break-through of our control was due mainly to the fact that no organised control of European farms in malarious areas was done; also to the fact that, owing to financial

restrictions, some native areas and isolated pockets of huts in the South had not been as thoroughly controlled as those native areas in the Central and Northern districts. It was shown that, through increased and abundant breeding of A.gambiae, not only did many cases of malaria (396 of the observed 764 cases noted in the territory) occur in these places, but also in adjoining controlled areas was there an increase in malaria cases due to infiltration of the malaria vector.

The Government has now provided additional funds which will enable the Department to deal with such major loopholes in malaria control in Swaziland effectively in the future.

During the months of August to October, besides the routine counting of all huts in native areas, an extensive survey of European farms, their compounds and huts, as well as additional small pockets, hitherto uncontrolled, of native huts mainly on Crown Land, was made. Also incorporated in the survey were native areas, previously uncontrolled, in the Mankaiana district (middleveld). It is intended to include all these huts in our organised control programme during the present season 1953/54.

The preliminary survey has revealed that the Department will spray an over-all total of approximately 120,000 huts (or rooms) during the course of the season. This means a considerable increase in activity, since in previous years of normal transmission only approximately 75,000 treatments were performed.

In addition, anti-larval work on irrigation schemes will be inaugurated with the active co-operation of the farmers or companies concerned, who will assist mainly by providing the necessary labour. All these projects will, however, be supervised by this Department. This inclusion of anti-larval work on irrigation schemes is essential in our control programme; owing to the abundance of vector breeding on such schemes (in and around rice-paddies in particular), imagocidal control is not sufficient for the effective protection of the people.

As in previous years, a blood survey was carried out during the non-transmission season (August to November) in order to ascertain the parasite-rate amongst the rural population of children. A total of 1,450 bloods from all areas including European farms was examined during this period. The survey revealed a parasite-rate of 5% amongst children up to the age of 16 years. Excluding those children from European farms from this figure, the parasite-rate in controlled native areas was 3.6%. The rate 3.6% still represents an increase of nearly 2% over the figure observed prior to the transmission season 1952/53, and reflects the after-effect of the epidemic character of that season. It is hoped that this regrettable increase in the parasite-rate of the rural children will again be reduced through our increased control activities during the coming season.

In November of this year, extraordinarily heavy- rainfall (averaging 11") occurred throughout the territory, and owing to this favourable condition, unusually heavy and early breeding of A.gambiae was observed in most of the bushveld areas. Except for an occasional adult mosquito (11 in all) found through check-spraying of huts however, the vector has so far been found only in the larval stage.

In order to prevent the occurrence again of last year's conditions, it was decided to commence hut-spraying operations early (at the beginning of November, instead of later in the month as in normal years), and to increase the speed of spraying by employing mobile squads. At the same time anti-larval work was started in places (mainly irrigation canals) where breeding was found to be particularly heavy. By the end of 1953 all bushveld areas have already received the first spray-treatment; well over 50,000 huts

(or rooms) have been sprayed. European farms and their compounds have also been sprayed by mobile spray-gangs under the supervision of a Senior Native Malaria Assistant.

The employment of vehicles with spray-gangs to speed up control work, especially on European farms and scattered native areas, has already proved very advantageous, and although this form of operation is somewhat more costly than that done by gangs working on foot only, it is thought that the additional cost will bring good dividend in our control.

DIELDRIN.

A small quantity (80 lbs) of this new insecticide, manufactured in America and distributed by the S.A. Shell Company, was purchased. The insecticide is reputed to have a much longer residual effect than D.D.T. or B.H.C. An experiment with Dieldrin, to ascertain the efficacy under local conditions, is now under way. Approximately 300 huts situated near rice-paddies at the Swaziland Irrigation Scheme were sprayed at the end of October. The huts will receive this single treatment only during the transmission season; they will be regularly checked throughout, at night-time in some instances, for the presence of mosquitoes. As a control, two compounds in the vicinity of the sprayed huts but about two miles apart, will be left entirely untreated. The inhabitants of these control areas will receive regular doses of Daraprim tablets. Blood specimens from all nativea living in Dieldrin-sprayed huts, and also those receiving Daraprim, will be examined monthly throughout the season. A report on these observations will be published in due course. The experiments could only be made possible through the kind and active co-operation of Dr. Davidson, resident Medical Officer of the Swaziland Irrigation Scheme.

C. LABORATORY.

Despite the fact that the Laboratory Assistant was absent on four months' overseas leave, the total number of specimens dealth with during the year shows an increase of over 2,000 (6,163 in 1952 as compared with 8,420 in 1953).

The following table gives detailed statistics of laboratory examinations carried out during the year; for comparisonnthe figures for 1952 are also listed.

ROUTINE LABORATORY EXAMINATIONS - 1953.
As compared with those of previous year 1952.

(1) General.	1953	1952
Serological Tests for Syphilis	7,653	5,403
Agglutination Tests:(Widal, Weil Felix, Brucellosis)	287	244
Diphtheria: Throat-Swab Cultures	44	58
Blood, Stool and Urine Cultures	158	159
Full Blood Counts and/or Differential Counts	97	116
Blood Sedimentation Rates	8	24
Biochemical Tests	30	38
Bacteriological Micro: Smears, Stools and Urines	143	121
Total	8,420	6,163

(2) Malaria and Bilharziasis Control.

		1953	1952.
Blood-slides:	received from Field-Staff	5,567	2,906
	received from Hospitals and Health Centres	740	120
Entomological Examinations: Identification			
	of Adult Mosquitoes	531	94
	of Mosquito Larvae	1,150	760
	of Snails	1,130	1,250
TOTAL LABORATORY EXAMINATIONS		17,538	11,293

The foregoing figures illustrate that the laboratory work during 1953 increased considerably over that in 1952, an over-all increase of over 6,000 specimens. This increase has taxed the resources of the laboratory staff, consisting of the Malaria Medical Officer, and one Laboratory Assistant, to the limit, especially if one considers the fact that owing to the four months' vacation leave of the Laboratory Assistant the work during this period had to be carried out single-handed by the Malaria Medical Officer. The stage has now been reached where no additional work can be undertaken with the present staff.

Syphilis. A total of 7,653 specimens was submitted for examination. Of these specimens, 297 were haemolysed or otherwise unsuitable for testing. Of the remaining 7356 specimens, 1,766 (24%) gave a positive reaction and 502 (6.8%) a doubtful reaction. "Positives" and "doubtfuls" thus totalled 30.8% of specimens, this figure being slightly below that observed during 1952 (positive 26.6%, doubtful 8.8%, total 35.4%).

Enteric Group of Fevers. Of 287 Agglutination Tests carried out, a total of 74 gave a diagnostic positive titre B. typhosus H and/or O. Only one serum gave a diagnostic titre B. paratyphosus A, and one a diagnostic titre B. paratyphosus C.

Of 158 Cultures examined, B. typhosus was isolated from 18, and B. paratyphosus A from one.

Diphtheria. 44 Cultures were submitted for examination. Of these, 7 exhibited growth morphologically resembling C. diphtheriae.

Staff Note. In conclusion, I wish to express my appreciation of the loyal work Miss Bredell, B.Sc., has done during the year, and I want to place on record the valuable assistance of the Health Inspector, Mr. van Eeden in his supervision of the field work of our malaria control.

GOVERNMENT HOSPITALS.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1953.

Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 1	001-008	Tuberculosis of respiratory system												
A 1	001-008	Tuberculosis of respiratory system	-	14	-	56	-	5	-	75	-	5	-	58
A 2	010	Tuberculosis of meninges and central nervous system	-	-	-	5	-	3	-	5	-	-	-	-
A 3	011	Tuberculosis of intestines, peritoneum and mesenteric glands	-	-	-	1	-	-	-	1	-	-	-	-
A 4	012,013	Tuberculosis of bones and joints	-	4	-	17	-	-	-	15	-	6	-	6
A 5	014-019	Tuberculosis, all other forms	-	5	-	31	-	-	-	33	-	3	-	21
A 6	020	Congenital syphilis	-	12	-	50	-	-	-	49	-	3	-	98
A 7	021	Early syphilis	-	3	1	126	-	-	1	121	-	8	1	406
A 8	024	Tabes dorsalis	-	-	-	1	-	-	-	1	-	-	-	-
A 10	022,023, 026-029	All Other syphilis	-	1	-	25	-	2	-	25	-	1	1	339
A 11	030-035	Gonococcal infection	-	5	1	56	-	-	1	60	-	1	19	636
A 12	040	Typhoid fever	-	5	1	44	-	3	-	44	1	5	1	2

continued overleaf

Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Deaths Treated		Remaining in hospital at end of year		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 13	041,042	Paratyphoid fever and other Salmonella infections	-	-	-	-	-	-	-	-	-	-	-	-
A 16(a)	045	Bacillary dysentery	-	4	7	90	-	6	7	94	-	-	41	241
16(b)	046	Amoebiasis	-	5	4	139	-	4	4	143	-	1	7	45
16(c)	047,048	Other unspecified forms of dysentery	-	-	-	1	-	-	-	1	-	-	2	-
A 17	050	Scarlet fever	-	-	1	-	-	-	1	-	-	-	-	-
A 18	051	Streptococcal sore throat	-	-	1	15	-	3	1	15	-	-	1	-
A 19	052	Erysipelas	-	-	-	-	-	-	-	-	-	-	-	1
A 20	053	Septicaemia and pyaemia	-	-	-	1	-	1	-	1	-	-	-	-
A 21	055	Diphtheria	-	-	-	1	-	1	-	1	-	-	-	-
A 22	056	Whooping cough	-	-	-	43	-	1	-	41	-	2	7	155
A 23	057	Meningococcal infections	-	-	-	2	-	-	-	2	-	-	-	1
A 25	060	Leprosy	-	-	-	-	-	-	-	-	-	-	-	6
A 26	061	Tetanus	-	-	1	-	-	-	1	-	-	-	-	-
A 30	082,083	Late effects of acute poliomyelitis and acute infectious encephalitis	-	-	-	-	-	-	-	-	-	-	1	1
A 32	085	Measles	-	3	3	49	-	-	3	52	-	-	48	194

continued overleaf.

Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 34	092	Infectious hepatitis	-	-	-	1	-	-	-	1	-	-	-	5
A 36 (b)	101	Flea borne endemic typhus (murine)	-	-	-	-	-	-	-	-	-	-	11	-
(c)	104	Tick borne epidemic typhus	-	-	1	-	-	-	1	-	-	-	-	-
(e)	102,103, 106-108,	Other and unspecified typhus	-	-	1	-	-	-	1	-	-	-	-	-
A 37 (a)	110	Vivax malaria (benign tertian)	-	-	-	2	-	-	-	2	-	-	-	-
(c)	112	Falciparum malaria (malignant tertian).	-	16	10	182	-	8	10	198	-	-	16	44
(e)	113,114 116,117	Other and unspecified forms of malaria	-	1	-	8	-	-	-	9	-	-	8	29
A 38 (a)	123.0	Schistosomiasis intestinal (S. mansoni)	-	-	-	1	-	-	-	1	-	-	-	-
(b)	123.1	Schistosomiasis vesical (S. haematobium)	-	6	-	124	-	1	-	125	-	5	3	278
A 42 (a)	126	Tapeworm (infestation) and other cestoda infestations	-	-	-	12	-	-	-	12	-	-	7	383
(b)	130.0	Ascariasis	-	-	-	13	-	-	-	13	-	-	2	177
(d)	124,128, 130.1,130.2	Other diseases due to helminths	-	-	-	1	-	-	-	1	-	-	5	7
A 43 (a)	037	Lymphogranuloma venereum	-	-	-	3	-	-	-	3	-	-	-	-
(b)	038	Granuloma inguinale, venereal	-	1	-	4	-	-	-	3	-	2	1	5
(d)	049	Food Poisoning infection and intoxication	-	-	-	-	-	-	-	-	-	-	3	-
(e)	071	Relapsing Fever	-	-	-	1	-	-	-	1	-	-	-	-
(f)	072	Leptospirosis icterohaemorrhagica (Weil's disease)	-	-	-	-	-	-	-	-	-	-	-	-
(h)	087	Chickenpox	-	-	-	3	-	-	-	3	-	-	26	55
(n)	131	Dermatophytosis	-	-	-	-	-	-	-	-	-	-	4	298
(o)	135	Scabies	-	2	-	12	-	-	-	14	-	-	-	184

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Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 43 (p)	036,054 059,063, 064,070, 074,086, 088,096.6	All other diseases classified as infective and parasitic	-	-	1	6	-	-	1	6	-	-	18	117
A 44	140-148	Malignant neoplasm of buccal cavity and pharynx	-	-	-	-	-	-	-	-	-	-	1	-
A 46	151	Malignant neoplasm of stomach	-	-	2	-	-	-	2	-	-	-	-	-
A 47	152-153	Malignant neoplasm of intestine, except rectum	-	-	-	1	-	1	-	1	-	-	-	-
A 48	154	Malignant neoplasm of rectum	-	-	1	-	-	-	1	-	-	-	-	-
A 51	170	Malignant neoplasm of breast	-	-	-	1	-	-	-	1	-	-	-	-
A 52	171	Malignant neoplasm of cervix uteri	-	-	-	1	-	-	-	1	-	-	-	1
A 53	172-174	Malignant neoplasm of other and unspecified parts of uterus	-	1	-	-	-	-	-	1	-	-	-	-
A 55	190-191	Malignant neoplasm of skin	-	-	-	2	-	-	-	2	-	-	1	1
A 56	196,197	Malignant neoplasm of bone and connective tissue	-	-	-	2	-	1	-	2	-	-	-	1
A 57	155-160, 164,165, 175,176 178-181 192-195 198,199	Malignant neoplasm of all other and unspecified sites	-	-	-	5	1	2	-	4	-	1	1	-
A 59	200-203, 205	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	-	-	-	1	-	-	-	1	-	-	-	-

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Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 60	210-239	Benign neoplasms and neoplasms of unspecified nature	-	1	-	31	-	-	-	32	-	-	6	51
A 61	250,251	Nontoxic goitre	-	-	-	3	-	-	-	3	-	-	1	16
A 62	252	Thyrotoxicosis with or without goiter	-	-	-	-	-	-	-	-	-	-	-	15
A 63	260	Diabetes mellitus	-	-	-	3	-	1	-	3	-	-	1	1
A 64 (a)	280	Beriberi	-	-	-	3	-	1	-	3	-	-	-	2
(b)	281	Pellagra	-	-	-	14	-	-	-	14	-	-	-	80
(c)	282	Scurvy	-	-	-	1	-	-	-	1	-	-	-	5
(d)	283-286	Other deficiency states	-	2	-	75	-	12	-	71	-	6	11	106
A 65 (a)	290	Pernicious and other hyperchromic anaemias	-	-	2	-	-	-	2	-	-	-	1	-
(b)	291	Iron deficiency anaemia (Hypochromic)	-	-	-	1	-	-	-	-	-	1	11	33
(c)	292,293	Other specified and unspecified anaemias	-	-	-	10	-	-	-	10	-	-	10	56
A 66 (a)	241	Asthma	-	-	1	4	-	-	1	4	-	-	20	57
(b)	240 242-245 253,254, 270-277, 287-289, 294-299	All other allergic disorders endocrine, metabolic and blood diseases	-	-	1	10	-	1	1	10	-	-	18	47
A 67	300,309	Psychoses	1	-	1	-	-	-	2	-	-	-	-	3
A 68	310-324, 326	Psychoneuroses and disorders of personality	-	-	3	8	-	-	3	8	-	-	106	166
A 69	325	Mental deficiency	-	-	-	1	-	-	-	1	-	-	1	2
A 70	330-334	Vascular lesions affecting central nervous system	-	-	4	2	-	-	4	2	-	-	1	12
A 71	340	Non-meningococcal meningitis	-	-	2	2	1	-	2	2	-	-	-	2

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Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
T			E	A	E	A	E	A	E	A	E	A	E	A
A 73	353	Epilepsy	-	-	-	10	-	-	-	9	-	1	1	24
A 74	370-379	Inflammatory diseases of eye	-	-	1	137	-	-	1	133	-	4	122	484
A 75	385	Cataract	-	-	-	-	-	-	-	-	-	-	-	11
A 76	387	Glaucoma	-	-	-	1	-	-	-	1	-	1	-	-
A 77 (a)	390	Otitis externa	-	-	2	11	-	1	2	9	-	2	79	187
(b)	391-393	Otitis media and mastoiditis	-	2	3	61	-	-	3	61	-	2	72	232
A 78 (c)	380-384, 386,388 389	All other diseases and conditions of eye	-	1	2	20	-	-	2	21	-	-	4	122
(b)	341,344 350,352 354,357 360-369 395-398	All other diseases of the nervous system and sense organs	-	3	3	26	-	-	3	8	-	-	42	327
A 79	400-402	Rheumatic fever	-	-	-	11	-	-	-	11	-	-	1	11
A 80	410-416	Chronic rheumatic heart disease	-	2	1	12	-	3	1	14	-	1	1	12
A 81	420-422	Arteriosclerotic and degenerative heart disease	-	2	8	18	1	5	7	19	1	1	8	1
A 82	430,434	Other diseases of heart	-	-	2	8	-	2	2	8	-	-	21	30
A 83	440-443	Hypertension with heart disease	-	-	2	1	-	-	2	1	1	-	13	1
A 84	444-447	Hypertension without mention of heart	-	-	2	-	-	-	2	-	-	-	12	5
A 85	450-456	Diseases of arteries	-	-	-	4	-	-	-	3	-	1	1	2
A 86	460-468	Other diseases of circulatory system	-	1	7	16	-	4	7	16	-	1	13	52
A 87	470-475	Acute upper respiratory infections	-	-	5	32	-	-	5	30	-	2	291	777

continued overleaf

Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 88	480-483	Influenza	-	2	12	97	-	-	12	98	-	1	236	946
A 89	490	Lobar pneumonia	-	2	2	136	-	3	2	134	-	4	5	42
A 90	491	Bronchopneumonia	-	2	9	165	-	10	9	158	-	9	3	155
A 91	492-493	Primary atypical, other and unspecified pneumonia	-	1	-	2	-	-	-	3	-	-	161	1
A 92	500	Acute bronchitis	-	4	6	99	-	1	6	99	-	4	27	1963
A 93	501, 502	Bronchitis, chronic and unqualified	-	1	2	38	-	1	2	38	-	1	6	212
A 94	510	Gypertrophy of tonsils and adenoids	-	-	8	21	-	1	8	21	-	-	7	71
A 95	518, 521	Empyema and **abscess** of lung	1	-	-	2	-	-	1	1	-	1	-	-
A 96	519	Pleurisy	-	-	1	19	-	-	1	19	-	-	-	26
A 97 (a)	523	Pneumoconiosis	-	-	-	9	-	-	-	9	-	-	1	8
(b)	511-517, 520-522 524-527	All other respiratory diseases	-	-	2	29	-	-	2	29	-	2	70	42
A 98 (a)	530	Dental Caries	-	-	9	11	-	-	9	11	-	-	197	879
(b)	531-535	All other diseases of teeth and supporting structures	-	-	1	31	-	-	1	30	-	1	9	257
A 99	540	Ulcer of stomach	-	-	4	4	1	4	4	4	-	-	21	-
A 100	541	Ulcer of duodenum	-	-	2	-	-	-	2	-	-	-	8	-
A 101	543	Gastritis and duodenitis	-	-	1	11	-	-	1	11	-	-	52	662
A 102	550-553	Appendicitis	-	1	12	9	-	-	12	10	-	-	22	10
A 103	560-561	Intestinal obstruction and hernia	-	-	2	8	1	-	2	8	-	-	14	12
A 104 (a)	570 571.0	Gastro-enteritis and colitis between 4 weeks and 2 years	-	5	5	157	-	8	5	159	-	3	45	740

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Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 104 (b)	571.1	Gastro-enteritis and colitis ages 2 years and over	-	1	12	39	-	1	12	39	-	1	198	563
(c)	572	Chronic enteritis and ulcerative colitis	-	-	1	1	-	-	1	1	-	-	1	-
A 105	581	Cirrhosis of liver	-	-	2	4	-	1	2	4	-	-	4	3
A 106	584,585	Cholelithiasis and cholecystitis	-	-	4	7	-	2	4	7	-	-	13	18
A 107	536-539, 542,544, 545 573-580 582,583, 586,587	Other diseases of digestive system	1	-	4	21	-	-	5	19	-	2	49	589
A 108	590	Acute nephritis	-	-	2	11	-	-	2	10	-	1	-	17
A 109	591-594	Chronic, other and unspecified nephritis	-	1	-	10	-	2	-	11	-	-	1	2
A 110	600	Infections of kidney	-	-	1	9	-	1	1	9	-	-	-	6
A 111	602,604	Calculi of urinary system	-	-	1	1	-	1	1	-	-	-	-	-
A 112	610	Hyperplasis of prostate	-	-	1	-	-	-	1	-	-	-	-	-
A 113	620,621	Diseases of breast	-	-	2	21	-	-	1	21	1	-	2	29
A 114 (a)	613	Hydrocele	-	-	1	5	-	-	1	5	-	-	-	34
(b)	634	Disorders of menstruation	-	1	6	17	-	-	6	18	-	-	9	440
(c)	601,603, 605-609, 611,612 614-617 622-633 635-637	All other diseases of genito-urinary system	-	4	15	108	2	-	15	105	-	7	204	891

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Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 115	640,641 681,682, 684	Sepsis of pregnancy, childbirth and the puerperium	-	-	-	2	-	-	-	2	-	-	-	-
A 116	642,652 685,686	Toxaemias of pregnancy and the puerperium	-	1	-	2	-	-	-	3	-	-	3	-
A 117	643,644, 670-672	Haemorrhage of pregnancy and child-birth	-	-	-	26	-	-	-	26	-	-	3	-
A 118	650	Abortion without mention of sepsis or Toxaemia	-	-	6	8	-	-	6	8	-	-	2	20
A 119	651	Abortion with sepsis	-	-	-	2	-	-	-	2	-	-	-	1
A 120 (a)	645-649, 673-680, 683 687-689	Other complications of pregnancy, child-birth and puerperium	-	2	14	74	-	2	13	76	-	-	1	5
(b)	660	Delivery without complications5	2	20	35	458	-	-	37	454	-	24	54	660
A 121	690-698	Infections of skin and subcutaneous tissue	-	5	21	220	-	1	21	209	-	16	459	313
A 122	720-725	Arthritis and spondylitis	-	1	-	23	-	-	-	24	-	-	2	148
A 123	726-727	Muscular rheumatism and rheumatism unspecified	-	-	-	27	-	-	-	26	-	1	40	321
A 124	730	Osteomyelitis and periostitis	-	1	2	26	-	1	2	26	-	1	-	14
A 125	737 745-749	Ankylosis and acquired musculoskeletal deformities	-	1	4	17	-	-	4	18	-	-	-	4
A 126 (a)	715	Chronic ulcer of skin (including tropical ulcer)	-	-	-	2	-	-	-	2	-	-	-	1
A 126 (b)	700-714 716	All other diseases of the skin	-	-	1	15	-	-	-	14	1	1	24	300

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Intermediate list No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 126 (c)	731-736, 738-744	All other diseases of musculoskeletal system	-	2	6	14	-	-	6	16	-	-	168	137
A 127	751	Spina bifida and meningocele	-	-	1	2	-	2	1	2	-	-	-	-
A 128	754	Congenital malformations of circulatory system	-	-	-	1	-	-	-	1	-	-	-	6
A 129	750-752, 753 755-759	All other congenital malformations	-	1	-	8	-	-	-	9	-	-	3	6
A 130	760,761	Birth injuries	-	-	-	-	-	-	-	-	-	-	-	2
A 131	762	Postnatal asphyxia and atelectasis	-	-	-	1	-	1	-	1	-	-	-	-
A 132 (a)	764	Diarrhoea of newborn (under 4 weeks)	-	-	-	-	-	-	-	-	-	-	-	7
(b)	765	Ophthalmia neonatorum	-	-	-	-	-	-	-	-	-	-	-	9
(c)	763,766-763	Other infections of new born	-	-	-	3	-	-	-	3	-	-	-	2
A 133	770	Haemolytic disease of newborn	-	-	1	-	-	-	1	-	-	-	-	-
A 134	769, 771,772	All other defined diseases od early infancy	-	-	-	10	-	1	-	10	-	-	1	49
A 135	773-776	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	-	-	-	33	-	7	-	33	-	-	-	25
A 136	794	Senility without mention of psychosis	-	-	-	1	-	-	-	1	-	-	1	7
A 137 (a)	788.6	Pyrexia of unknown origin	-	-	2	8	-	-	2	8	-	-	6	1
(b)	793	Observation, without need for further medical care	-	-	-	2	-	-	-	2	-	-	304	1121
(c)	642,652 780-787, 788.1-788.7 788.9 789-792 795	All other ill-defined causes of morbidity	-	-	1	-	-	-	1	-	-	-	54	50

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Intermediate List No.	Detailed list No.	Group Causes	Cases remaining in hospital from previous year		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE (EXTERNAL CAUSE).												
AE 138	E810-E835	Motor Vehicle Accidents	-	3	2	39	-	-	2	41	-	1	12	19
AE 139	E800-E802 E840-E866	Other transport accidents	-	-	1	13	-	-	1	13	-	-	2	16
AE 140	E870-E895	Accidental poisoning	-	-	-	14	-	-	-	14	-	-	81	6
AE 141	E900-E904	Accidental falls	-	6	9	142	-	-	9	137	-	11	20	304
AE 142	E612	Accident caused by machinery	-	3	2	18	-	-	2	21	-	-	8	21
AE 143	E916	Accident caused by fire and explosion of combustible material	-	5	2	49	-	5	2	50	-	4	3	75
AE 144	E917,E918	Accident caused by hot substance, corrosive liquid, steam, and radiation	-	2	2	35	-	-	2	33	-	4	18	47
AE 145	E919	Accident caused by firearm	-	-	-	3	-	-	-	3	-	-	1	-
AE 146	E929	Accidental drowning and submersion	-	-	-	-	-	-	-	-	-	-	-	-
AE 147	E910,E915, E913-E915, E920-E928 E930-E965	All other accidental causes	-	3	4	108	1	3	4	107	-	4	53	459
AE 148	E970-E979	Suicide and self-inflicted injury	-	2	-	45	-	-	-	47	-	-	-	-
AE 149	E980-E985	Homicide and injury purposely inflicted on other persons (not in war)	-	2	1	155	-	3	1	154	-	3	6	186
		GRAND TOTAL	5	177	335	4383	7	128	335	4387	5	173	3798	19667
		ATTENDANTS	-	17	6	586	-	-	6	586	-	17	-	-

Intermediate List No.	Detailed list No. Y	Group Causes	Cases remaining in hospital from previous year.		Total Admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
			E	A	E	A	E	A	E	A	E	A	E	A
		"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE (NATURE OF INJURY).												
AN 138	N800-N804	Fracture of skull	-	-	-	22	-	3	-	21	-	1	1	3
AN 139	N805-N809	Fracture of spine and trunk	-	-	3	12	-	-	3	12	-	-	13	12
AN 140	N810-N829	Fracture of limbs	-	7	5	101	1	-	5	96	-	12	13	40
AN 141	N830-N839	Dislocation without fracture	-	-	-	6	-	-	-	6	-	-	2	7
AN 142	N840-N848	Sprains and strains of joints and adjacent muscles	-	1	2	29	-	-	2	30	-	-	27	363
AN 143	N850-N856	Head injury (excluding fracture)	-	-	2	25	-	-	2	25	-	-	5	49
AN 144	N860-N869	Internal injury of chest, abdomen and pelvis	-	1	-	8	-	-	-	9	-	-	-	2
AN 145	N870-N908	Laceration and open wounds	-	8	9	244	-	-	9	246	-	6	62	496
AN 146	N910-N929	Superficial injury, contusion and crushing with intact skin surface	-	-	-	47	-	-	-	47	-	-	71	171
AN 147	N930-N936	Effects of foreign body entering through orifice	-	-	-	7	-	1	-	7	-	-	-	33
AN 148	N940-N949	Burns	-	7	2	80	-	5	2	80	-	7	5	113
AN 149	N960-N979	Effects of poisons	-	-	-	19	-	2	-	18	-	1	1	13
AN 150	N950-N959 N980-N999	All other and unspecified effects of external causes	-	2	-	21	-	-	-	23	-	-	158	33

METEROLOGICAL OBSERVATIONS.

SWAZILAND 1953.

Station - Mbabane (Highveld).

Alt. 3,700 feet.

Month	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total.	No. of days.
January	24.8	14.9	30.5	13.0	5.52"	10
February	24.0	15.0	32.5	11.0	7.4"	13
March	21.0	13.5	25.5	10.3	4.9"	14
April	22.5	12.2	27.5	8.0	2.3"	8
May	21.2	10.4	27.2	4.0	0.8"	6
June	18.0	5.9	27.5	0.3	0.07"	1
July	18.1	4.5	24.5	1.2	0.73"	2
August	18.5	7.2	25.9	1.0	0.86"	5
September	20.9	6.5	28.5	2.5	1.6"	4
October	23.9	11.7	33.4	6.5	3.07"	10
November	23.3	13.7	30.0	9.5	10.31"	19
December	23.4	15.3	30.0	11.5	6.27"	13
Year	70.8°F	51.6°F	92.1°F	34.1°F	43.83"	105
						/Average 56.46

			Station	- Bremersdorp (Middleveld)		
January	30.7	19.4	36.0	16.3	2.65"	12
February	29.9	18.7	36.5	15.0	4.1"	13
March	26.8	17.1	30.6	14.5	7.5"	14
April	26.5	14.4	32.8	10.5	0.9"	7
May	26.6	11.4	32.6	8.1	0.2"	3
June	24.2	7.5	27.4	5.0	0.06"	1
July	23.0	7.4	30.1	3.0	0.18"	22
August	24.6	10.5	31.0	5.6	0.23"	5
September	24.8	11.1	34.4	7.5	1.77"	5
October	28.4	16.3	40.2	12.4	12.73"	13
November	26.3	17.3	31.4	13.5	11.53"	19
December	27.9	18.4	35.5	15.4	2.39"	15
Year	77.8°F	57.3°F	97.7°F	37.4°F	34.22"	109
						/Average 33.78

METEROLOGICAL OBSERVATIONS.

SWAZILAND 1953.

Station - Hlatikulu - (Highveld).

Alt. 3890 feet.

Month	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days.
January	24.4	15.9	30.5	13.0	2.48"	7
February	24.3	15.7	32.5	11.5	5.9"	13
March	21.4	13.9	27.5	10.5	4.8"	15
April	20.8	12.7	25.5	9.0	2.8"	5
May	20.8	11.5	27.0	8.0	0.0"	-
June	17.7	9.0	22.2	3.5	0.7	2
July	16.9	6.9	23.5	2.5	0.15"	1
August	17.7	8.6	24.0	4.0	0.92"	5
September	18.7	9.1	29.0	4.0	3.01"	5
October	22.0	15.4	33.0	19.0	4.39"	11
November	20.6	15.2	29.0	10.0	7.99"	16
December	22.2	15.1	29.5	12.0	4.96"	14
Year	69.2°F	54.3°F	91.4°F	36.5°F	38.11"	94
						Average 45.85

			Station - Stegi (Lowveld).			
January	28.3	17.4	32.0	14.5	4.7"	15
February	27.2	17.6	33.4	14.0	2.7"	6
March	25.4	16.4	31.0	13.5	6.1"	9
April	26.0	14.9	31.9	11.5	1.6"	3
May	25.2	13.9	29.5	10.6	0.9"	3
June	22.4	10.3	25.6	7.0	0.0"	-
July	21.1	9.4	28.5	2.4	1.03"	3
August	22.8	11.4	30.0	8.0	0.0"	-
September	23.0	10.8	32.2	6.0	2.53"	3
October	25.0	15.8	32.2	16.0	8.57"	15
November	25.1	15.5	31.2	11.6	5.97"	13
December	29.5	16.6	35.2	14.3	1.85"	7
Year	78,8°F	56.6°F	95.9°F	36.3°F	29.91"	67
						Average 29.61